

ATTACHMENT A

Clean Replacement Claims (entire set of pending claims)

Following herewith is a clean copy of the entire set of pending claims.

1. (amended) Computer card for electro-pneumatic calibrators with system management inserted in a rigid material case in which are installed all of its components, connected to an electric power source and a relay, having in its front part a liquid crystal display and keys for entering data to its internal systems, characterized by presenting a Microchip Controller storing the equipment programs and receiving information from the keyboard, the Tire pressure sensor and the Tire pressure sensor, the temperature sensor, the modem (not shown, connected to the Serial Output) and the mechanical enabling key, with said Microchip Controller being able to control the operation of the solenoid valves for inflating with air, inflating with N₂, deflating the tire, plus the solenoid valves for the compressor, purge valve, water output, vacuum cleaner output, electric heater output, Alarm output, modem output and LCD display.
2. (amended) Computer card for electro-pneumatic calibrators with system management according to claim 1, characterized by the fact that the Microchip Controller transmits information to the LCD display, before, during and after the calibration operation, with displaying of previously defined messages.
3. (amended) Computer card for electro-pneumatic calibrators with system management according to claim 1, characterized by the fact that the Microchip Controller receives data from the temperature sensor and exhibits it on LCD display.
4. (amended) Computer card for electro-pneumatic calibrators with system management according to claim 1, and characterized by the fact that the Microchip Controller commands the activation of the RST heater for protection of the LCD display against the damaging effects of low temperatures.

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5. (amended) Computer card for electro-pneumatic calibrators with system management according to claim 1, characterized by the fact that the Microchip Controller receive data from the time clock and suggest the preventive maintenance work of the equipment and the replacement of spare parts on the same LCD display.

6. (amended) Computer card for electro-pneumatic calibrators with system management according to claim 1 characterized by the fact that the Microchip Controller connected to a sensor or special buoy interprets or detects the level or conditions of the compressor oil, and if necessary, interrupts immediately its operation, exhibiting a message on the LCD display and turning itself off.

7. (amended) Computer card for electro-pneumatic calibrators with system management according to claim 1 characterized by the fact that the Microchip Controller upon entering the emergency mode instantly opens the tire deflating valve, also interrupting other actions which are being performed, exhibiting a message on the LCD display and sounding the Alarm.

8. (amended) Computer card for electro-pneumatic calibrators with system management according to claim 1, characterized by the fact that the Microchip Controller checks on every operation the current pressure interrupting the use in case it identifies a reading which is incompatible with those actions previously executed.

9. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller checks and accepts the new zero reference for pressure inside those limits set every time it is used, and interrupts the operation in case the values are out of these preset limits.

10. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller controls a purge valve, both on the compressor tank and on filters, dryers, condensed separators or air networks.

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11. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller manages and turns on and off the compressor according to preset values or letting the system calculate the operational pressure limits, expanding the service life and saving energy.

12. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by incorporating a third safety valve.

13. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by incorporating a second LCD display, along with a second screen and set of keys placed on the back of the equipment, forming a double-faced model.

14. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by incorporating a serial communication port to receive and transmit data to a modem to be operated remotely, or a printer or even an infra-red sensor, also liberating the operation and fixing errors, if necessary.

15. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by allowing the entering of an overpressure value, for the calibration of large tires.

16. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by incorporating a special key for emergency to be activated by hardware.

17. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by presenting a relay that disconnects the energy supply of the equipment and activates the deflating valve every time the emergency key is pressed.

18. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by an incorporation of the converter of voltage into a frequency component instead of the usual AD converters.

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19. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller activates and monitors the tire inflating/deflating system through the insertion of coins in the equipment.

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20. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller identifies the insertion of coins and activates the water pump, the opening valve and the closing valve of the water supply.

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21. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller activates the solenoid valves to open and close the vacuum supply, by means of the insertion of coins into the equipment.

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22. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller identifies the insertion of coins, activates and monitors the detergent supply system.

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23. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller activates and monitors the nitrogen supply system.

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24. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller incorporates counters and totalizers for coins, per operation, per kind of function used and general.

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25. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the totals have a unique password for checking its exactness and authenticity.

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26. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller can detect at any time if the tire is or not connected correctly to the equipment.

27. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller, during the process of inflating or deflating of the tire, detects possible leaks in the line.

28. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that it checks if the system is connected to the tires without harm for the auto-reset.

29. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller processes the internal routine of only initiating the process of inflating or deflating the tire, after it verifies that the line to be pressurized is completely stabilized, presenting an Error message in case the pressure on the hose that reaches the tire does not become stable after a given period of time.

30. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller calculates the stabilization velocity of the current pressure and compares it to the standard minimum velocity, certifying that the line pressure is stable.

31. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by being able to exhibit on the display the estimated time for finishing the inflating or deflating of the tire, updated on every pulse.

32. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller stores internally standard pressure limits, previously set for each type of installation of the equipment.

33. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller may receive changes of the minimum and maximum pressure limits, via keyboard, by an authorized person, by means of a password.

34. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller automatically calculates the minimum reliable pressure pulse in order to later on calculate the total inflating/deflating time of the tire.

35. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller enters the Stand By mode after 1' and 30" without use or if no key is pressed.

36. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller, interrupts the operation of the equipment, exhibits the corresponding message, opens the deflating valve and activates the Alarm every time the same error, failure or discrepancy occurs for three consecutive times upon performing an operation or function.

37. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller interrupts the operation of the equipment, exhibits the corresponding message, opens the deflating valve and activates the Alarm, every time any key is pressed during the operation.

38. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the use of a three-way solenoid valve which when turned off deviates the air to the atmosphere, to allow the compressor to operate continuously, freely and without heating.

39. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the exhibits the complete totals of all those items used as well as the totals of failures presented.

40. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the Microchip Controller commands the procedures to turn on the compressor, such as deflating the line, and checking of the compressor minimal internal pressure to liberate its use; and in case the system does not reach this minimal internal pressure a warning message appears on the display.

41. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by being able to exhibit constantly on the display the current time and the remaining usage time allowed after liberation or payment of the service, turning off the whole system once this time is elapsed.

42. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the equipment can be equipped with an air-retention tip as a replacement of the functions of those routines connected to an empty tire.

43. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that the equipment only goes back to operation after the introduction of a new password issued by the equipment owner.

44. (amended) Electronic circuit for electro-pneumatic calibrator according to claim 1, characterized by the fact that during the process of inflating is made a check to ensure there is enough pressure in the air line.